
Letter

Two recent publications in Cancer Research (1, 2) have stimulated us to write this letter to clarify the definition of the ACF.1 ACF were first defined and identified in 1987 (3) in rodents. The same definition permitted the identification of ACF in humans in 1991 (4). Subsequently, human ACF were shown to be monoclonal (5), i.e., the earliest identified neoplastic lesions in human colons. Many laboratories have found in ACF altered genes and phenotypes that are commonly observed in colon cancers (4, 6–12), and many laboratories are using ACF as biomarkers to assess the effects of colon carcinogens and chemopreventive agents (13–18). In studying the pathogenesis of other kinds of colonic lesions, it is important not to change the meaning of ACF as studied in a rapidly growing, published series of investigations from many laboratories.

Yamada et al. (1, 2) presented interesting data on β-catenin expression and mutations in early colonic lesions after the administration of azoxymethane to rats. The authors state that the lesions they have characterized, i.e., “β-catenin-accumulated crypts, . . . are independent of ACF [aberrant crypt foci]” (Title and Abstract, Ref. 2). However, crypts that accumulate β-catenin in their cytoplasm and nuclei appear to us to be histologically indistinguishable from a subgroup of ACF that include most of the ACF with dysplasia.

ACF, by definition (3, 19), is defined microscopically in segments of unembedded colon. The use of the term “macroscopic” to describe these lesions in the title and throughout the first paper (1) ignores the definition of ACF and is misleading. In “Results,” Yamada et al. (1) state: “two populations of altered crypts were histologically detected.” The authors then equate one histological population with ACF and the second histological population with a new lesion without making clear how they related the histological preparations to the unembedded preparations where an ACF, by definition, is identified. The authors state (Discussion, Ref. 1) “an en face preparation technique is considered to provide a useful tool for the mapping and quantitation of mucosal aberration, including ACF (26).” We could not find anything about “en face preparations” in Ref. 26 by Suzui et al. En face preparations, as discussed by Hamilton et al. (25), are useful to identify histological alterations but do not identify or claim to identify an ACF that is first described 5 years after that publication. As illustrated in many publications (6, 11, 12, 19–22), an ACF can appear very different in histological sections depend-

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1 The abbreviation used is ACF, aberrant crypt focus.

References


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